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**Introduction:** Viral encephalitis is an important infection of the central nervous system with significant morbidity and mortality. We studied the clinical, laboratory and radiological characteristics of viral encephalitis patients managed in our hospital, focusing on factors associated with poor prognosis.

**Methods:** We retrospectively studied the clinical features of patients diagnosed with viral encephalitis and managed at a regional hospital in Hong Kong during 2000-2010. Patients with a poor prognosis were defined as death, Rankin test score  $\geq 3$  or Modified Barthel Index  $\leq 60$  at 6 months after admission.

**Results:** A total of 43 patients with viral encephalitis were identified. The mean age was 52 years with 49% males. The aetiologies of viral encephalitis were identified in 33% of cases (herpes simplex virus 26%, varicella zoster virus 5%, and Japanese B virus 2%). 21% of patients had a poor prognosis at 6 months after admission. Patients of older age, with a known history of hypertension, presenting with focal neurological signs and requiring prolonged hospitalisation were associated with poor prognosis ( $P < 0.05$ ). A haemorrhagic lesion on cranial MRI was also associated with a poor prognosis and was identified as an independent poor prognostic indicator in multivariate logistic regression analysis ( $P < 0.05$ ).

**Conclusion:** Herpes simplex virus is the most common cause of viral encephalitis in our locality. 22% of patients are associated with a poor outcome and presence of a haemorrhagic lesion on cranial MRI is an independent poor prognostic indicator.

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**Background:** Cigarette smoking is a major risk factor in the development of age-related chronic obstructive pulmonary disease (COPD). The degree of cigarette smoking mediated the association between serotonin transporter (SERT) gene polymorphism and COPD. However, the interrelation between circulating 5-HT, cigarette smoking and COPD is mainly unknown. The current study aimed to investigate the mediation effects of 5-HT on cigarette smoking-induced COPD and the relation between plasma 5-HT and age.

**Methods:** The association between plasma 5-HT, age and COPD was analysed in a total of 62 COPD patients and 117 control subjects. Passive smoking rat model was also used to further explore the effect of cigarette smoking on plasma and bronchoalveolar lavage (BAL) 5-HT levels.

**Results:** Elevated plasma 5-HT levels were associated with the risk in developing COPD (OR=1.221; 95% CI, 1.123-1.319;  $P < 0.0001$ ). The effect remained significant after adjustment of age and pack-years smoked. Furthermore, plasma 5-HT was found to mediate the relation between pack-years smoked and COPD. Positive correlation ( $r = 0.303$ ; 95% CI, 0.057-0.514;  $P = 0.017$ ) was found between plasma 5-HT and age in COPD but not in control groups. In support, passive smoking significantly elevated plasma 5-HT levels and showed a trend of increase in BAL 5-HT levels in the rat model in vivo.

**Conclusion:** Our results demonstrate the mediation role of plasma 5-HT in cigarette smoking-induced COPD. Smoking exposure for a limited period of time was associated with high 5-HT level. Further studies will be required to elucidate the mechanism of CS on the regulation of 5-HT.

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